

What is claimed is:

1. A biasing apparatus comprising a biasing tool having a main body portion supporting a first and second independently cantilevered biasing finger, each biasing finger advancing a disc relative to a central axis of rotation of a hub by imparting a substantially equal bias force on the disc.  
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2. The biasing apparatus of claim 1, in which each biasing finger comprises:  
a proximal end adjacent the main body and extends from the main body  
10 portion in a first direction;  
a disc engagement region protruding in a second from a distal end of each biasing finger; and  
an attachment aperture confined within the main body portion  
accommodating alignment of each disc alignment region relative to  
15 the disc.
3. The biasing apparatus of claim 2, in which the biasing tool is a plurality of biasing tools, and in which the disc is a plurality of discs, wherein each disc of the plurality of discs corresponds to the disc engagement region of one of  
20 the biasing fingers of the plurality of biasing tools, and in which each disc responds independently to an interaction with the bias finger with which it corresponds, and wherein each disc individually responds to a simultaneous interaction of the plurality of disc with the plurality of biasing finger.
- 25 4. The biasing apparatus of claim 3, in which each disc comprises:  
a substantially uniform inner and outer diameter;  
a mounting aperture confined within the inner diameter;  
a rotational axis within the mounting aperture equidistant from each point  
along the inner diameter;  
30 a data region between the outer diameter and the inner diameter;  
an index feature adjacent the outer diameter; and  
a plurality of substantially concentric servo tracks written in the data region, in which the plurality of concentric servo tracks has a center

of rotation offset from the rotational axis, wherein the center of rotation is confined within the mounting aperture and positioned between the index feature and the rotational axis.

5           5.       The biasing apparatus of claim 4, in which each disc further comprises an outer diameter portion adjacent the index feature, wherein each outer diameter portion interacts with the disc engagement region of the biasing finger with which the disc corresponds.

10           6.       The biasing apparatus of claim 5, in which the hub is a motor hub, and in which each biasing finger imparts a substantially equal biasing force on the outer diameter portion of the disc with which it corresponds, during interaction between each outer diameter portion and the disc engagement region of the biasing finger with which the disc corresponds, wherein the biasing force imparting on the  
15       disc substantially aligns the center of rotation of the servo tracks with the central axis of rotation of the motor hub.

              7.       The biasing apparatus of claim 3, in which each biasing finger extends from the main body portion in substantially a same direction, and in which  
20       the disc has an outer diameter portion and a rotational axis, and further in which the second biasing finger is in line with and offset from the first biasing finger, wherein the first biasing finger is normal to the outer diameter portion of the disc and positioned between the second biasing finger and the outer diameter portion of the disc.

25           8.       The biasing apparatus of claim 7, in which the hub is a motor hub, and in which the outer diameter portion of the disc engages the engagement region of the first biasing finger, wherein the bias force imparted on the disc by the first biasing finger during interaction between the outer diameter portion of the disc and  
30       the first biasing finger misaligns the rotational axis of the disc relative to the central axis of rotation of the motor hub.

9. The biasing apparatus of claim 7, in which the hub is a motor hub, and in which the outer diameter portion of the disc engages the engagement region of the second biasing finger, wherein the bias force imparted on the disc by the first biasing finger during interaction between the outer diameter portion of the disc and the first biasing finger misaligns the rotational axis of the disc relative to the central axis of rotation of the motor hub.

10. The biasing apparatus of claim 2, in which the biasing tool is a plurality of biasing tools, the disc is a plurality of discs, and in which each biasing finger of each of the plurality of biasing tools extends in substantially a same direction from the main body portion of the biasing tool associated with each biasing finger, wherein each disc of the plurality of discs corresponds to and interacts with a biasing finger of one of the plurality of biasing tools, and wherein each biasing finger is configured to impart a substantially equal biasing force on the disc with which it interacts.

11. The biasing apparatus of claim 10, in which each disc of the plurality of discs has an outer diameter portion and a rotational axis, and in which the second biasing finger of each of the plurality of biasing tools is in line with and offset from the first biasing finger of each biasing tool, wherein the first biasing finger is normal to the outer diameter portion of the disc of the plurality of discs with which it interacts, and positioned between the second biasing finger and the outer diameter portion of the disc of the plurality of discs with which the second biasing finger interacts.

12. The biasing apparatus of claim 11, in which the hub is a motor hub, and in which each outer diameter portion of each disc of the plurality of discs engages the engagement region of the biasing finger with which it interacts, wherein the bias force imparted by each biasing finger interacting with the outer diameter portion of the disc with which it corresponds misaligns the rotational axis of the disc relative to the central axis of rotation of the motor hub.

13. The biasing apparatus of claim 12, in which each misaligned rotational axis of each disc of the plurality of discs is misaligned in a predetermined direction from the central axis of rotation of the motor hub.

5 14. The biasing apparatus of claim 13, in which the predetermined direction of misalignment between each disc of the plurality of discs and the central axis of rotation of the motor hub substantially offset a rotational imbalance of the plurality of discs.

10 15. The biasing apparatus of claim 2, in which the disc comprises:  
a substantially uniform inner and outer diameter;  
a mounting aperture confined within the inner diameter;  
a rotational axis within the mounting aperture equidistant from each point  
along the inner diameter;  
15 a data region between the outer diameter and the inner diameter;  
an index feature adjacent the outer diameter; and  
a plurality of substantially concentric servo tracks written in the data  
region, in which the plurality of concentric servo tracks has a center  
of rotation offset from the rotational axis, wherein the center of  
20 rotation is confined within the mounting aperture and positioned  
between the index feature and the rotational axis.

16. The biasing apparatus of claim 15, in which the disc further  
comprises an outer diameter portion adjacent the index feature, wherein the  
25 diameter portion interacts with the disc engagement region of the biasing finger  
with which the disc corresponds, and in which the second biasing finger is in line  
with and offset from the first biasing finger, wherein the first biasing finger is  
normal to the outer diameter portion of the disc and positioned between the second  
biasing finger and the outer diameter portion of the disc.

30 17. The biasing apparatus of claim 16, in which the hub is a motor hub,  
and in which the outer diameter portion of the disc engages the engagement region  
of the first biasing finger, wherein the bias force imparted on the disc by the first

biasing finger during interaction between the outer diameter portion of the disc and the first biasing finger substantially aligns the center of rotation of the servo tracks with the central axis of rotation of the motor hub.

- 5           18.     The biasing apparatus of claim 16, in which the hub is a motor hub, and in which the outer diameter portion of the disc engages the engagement region of the second biasing finger, wherein the bias force imparted on the disc by the second biasing finger during interaction between the outer diameter portion of the disc and the second biasing finger substantially aligns the center of rotation of the  
10 servo tracks with the central axis of rotation of the motor hub.

19. A method for biasing a disc adjacent a hub by steps comprising:
- providing a motor hub with a central axis of rotation, the motor hub  
supporting a disc having an annular servo track with a center of  
rotation offset from the central axis of rotation of the motor hub;
- 5 aligning a biasing tool having at least a first and second biasing finger  
adjacent the disc;
- selecting a disc engagement region of one of the at least first and second  
biasing fingers for engagement with the disc; and
- 10 imparting a bias force on the disc with the selected engagement region,  
which aligns the center of rotation of the annular servo track with  
the central axis of rotation of the motor forming a common  
rotational axis for the motor hub and the annular servo track.

20. A data storage device comprising a disc biased adjacent a motor hub by means for biasing a disc adjacent a hub through steps for biasing a disc adjacent a hub.